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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/323,628	06/01/1999	KENSHIN KITO	791-052	9448

25191 7590 11/21/2002

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EXAMINER

SORKIN, DAVID L

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 11/21/2002

25

Please find below and/or attached an Office communication concerning this application or proceeding.

AG-25

Office Action Summary

Application No.

09/323,628

Applicant(s)

KITOH, KENSHIN

Examiner

David L. Sorkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-23 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-23 and 25-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 24
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 19 August 2002 has been entered.

Claim Objections

2. Applicant is advised that should claim 3 be found allowable, claim 4 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. See MPEP § 706.03(k).

3. Applicant is advised that should claim 5 be found allowable, claim 6 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

4. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 12 contradicts base claim 1 in that, for the aluminum tabs of both the positive and negative electrode, claim 1 recites a cross-sectional area of "not less than 0.009cm²", while claim 12 attempts to broaden the range to "not less than 0.008 cm²".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 3, 4, 7, 16-23 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 8-185850. Regarding claim 1, JP 8-185850 discloses a lithium secondary battery comprising an internal electrode body including a positive electrode (2) a negative electrode (3), and separator (8), the positive and negative electrode being laminated with the separator so that the positive electrode and the negative electrode are prevented by the separator from coming in direct contact with each other; an organic electrolyte (see paragraph [0035]); a plurality of positive electrode tabs (5a) connected to the positive electrode and at least a plurality of negative electrode tabs (7a) connected to the negative electrode from current collecting, a total cross-sectional area of all the positive electrode tabs connected to the positive electrode being not less than 0.009 cm^2 and being aluminum (see paragraph [0040] where an aluminum tabs cross section of " 1.5 mm^2 ", which is 0.015 cm^2 is disclosed) and a total cross-sectional area of all the negative electrode tabs connected to the negative electrode being not less than 0.005 cm^2 and being copper (see paragraph [0040] where a copper tabs cross section of " 0.83 mm^2 ", which is 0.0083 cm^2 is disclosed). Regarding claims 3, 4 and 23, the positive electrode tabs are 20 microns thick and the negative electrode tabs are 10 microns thick (see paragraph [0026]). Based upon the overall thickness of the battery

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of 30 mm and number of units (46 positive and 47 negative) (see paragraph [0020]), the disclosed separator thickness (25 microns, see paragraph [0023]) and collector thicknesses (10 and 20 microns, see paragraphs [0021] and [0022]), it is clear that an active layer is thicker than a tab. Regarding claim 7, JP 8-185850 discloses a lithium secondary battery comprising an internal electrode body including a positive electrode (2) a negative electrode (3), and separator (8), the positive and negative electrode being laminated with the separator so that the positive electrode and the negative electrode are prevented by the separator from coming in direct contact with each other; an organic electrolyte (see paragraph [0035]); a plurality of positive electrode tabs (5a) connected to the positive electrode and at least a plurality of negative electrode tabs (7a) connected to the negative electrode from current collecting, wherein the tabs function as current fuses to become nonconductive in the event that a condition arises during discharge of the battery in which sufficient current to damage one or more components of the battery is provided (see paragraph [0044]). Regarding claims 16 and 17, the tabs are connected to positive and negative terminals by welding (see paragraphs [0033] and [0034]). Regarding claims 18 and 19 a battery capacity of not less than 5 Ah is disclosed in paragraph [0036] ("47 Ah"). Regarding claims 20 and 21 the battery is used for an electric vehicle (see paragraph [0002]). Regarding claim 22, a total cross-sectional area of all the positive electrode tabs connected to the positive electrode being not less than 0.014 cm^2 and being aluminum (see paragraph [0040] where an aluminum tabs cross section of " 1.5 mm^2 ", which is 0.015 cm^2 is disclosed) and a total cross-sectional area of all the negative electrode tabs connected to the

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negative electrode being not less than 0.008 cm^2 and being copper (see paragraph [0040] where a copper tabs cross section of " 0.83 mm^2 ", which is 0.0083 cm^2 is disclosed).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8, 12-15, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 8-185850, which is discussed above regarding claims 1 and 7. Regarding claims 8, 12, 13 and 25-27, specific values of the ratio of tab cross-sectional area to the internal resistance of the battery are not disclosed by the reference. However, it is stated that tab cross-sectional area should be selected in proportion to the resistance of internal components of the battery (see paragraphs, [0031], [0032], and [0042]. Therefore it is considered that it would have been obvious to one of ordinary skill in the art to have selected an optimal or workable range of the claimed ratios. See *In re Aller* 105 USPQ 233, 235 (CCPA 1955). Regarding claims 14 and 15, while JP 8-185850 does not explicitly state that the resistance values of tabs are within 20% of an average value, it is considered that use of the word "units" throughout the reference would have suggested to one of ordinary skill in the art to have repeated substantially identical items.

10. Claims 5, 6, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 8-185850 in view of Kita et al. (US 5,849,431). JP 8-185850 is discussed above regarding claims 1 and 7. JP 8-185850 does not disclose a specific value from the internal resistant of the battery or the contribution of the tabs thereto. Kita ('431) teach that, in a secondary battery with tabs, it is possible (and desirable) to minimize internal resistance by increasing the number of tabs (see col. 2, lines 4-9 and 53-57). Therefore, it is considered that it would have been obvious to one of ordinary skill in the art to have minimized the internal resistant of the battery of JP 8-185850 and the contribution of the tabs thereto, as taught by Kita ('431) to avoid overheating the battery (see col. 1 line 64 to col. 2 line 8 and col. 2, lines 53-57).

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 8-185850 in view of Ferguson (US 597,969). JP 8-185850, discussed above regarding claim 8, fails to disclose tabs having a narrow portion. Ferguson ('969) teaches providing a tab fuse with a narrow portion (see page 1, lines 42-91). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the tab fuses of JP 8-185850 with a narrow portion as taught by Ferguson ('969) because Ferguson ('969) states that the narrow portion provides several advantages such as allowing for improved cooling under normal loads and minimizing production of melted metal (see page 1, lines 66-91).

Response to Arguments

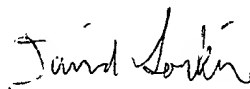
12. Applicant's arguments with respect to claim are moot in view of the new grounds of rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 703-308-1121. The examiner can normally be reached on 8:00 -5:30 Mon.-Fri..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



David Sorkin

November 13, 2002


W. L. WALKER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700